

REMARKS

This is a divisional application of USSN 09/442,000, now U.S. Patent No. 6,486,316 B1. Claims 1 to 31 are pending in this application.

Applicants wish to thank the Examiner for extending the courtesy of conducting a telephone interview on Oct 8, 2003. During the course of the interview, the Examiner stated that the Final Office Action noted on the Office Action Summary sheet was in error. The July 2, 2003 Office Action was actually a non-final rejection (see last line on page 14 of said Office Action) and the Examiner will remove the Final Action on receipt of this response. Applicants thank the Examiner for acknowledging and correcting this error.

Present claim 1 recite a process synthesizing a triazine compound of Formula III utilizing reactants, a Lewis acid, a reaction promoter and a solvent. A reaction facilitator is formed by combining the Lewis acid and the reaction promoter. The present inventors have discovered that in the presence of at least one solvent and a reaction facilitator that the reaction of a cyanuric halide with substituted or unsubstituted aromatic compounds can prepare intermediate 2-halo-4,6-bisaryl-1,3,5-triazine compounds of Formula III in higher yields or higher selectivity. As discussed starting on page 4 of this application, the production of a useful yield of the intermediate 2-halo-4,6-bisaryl-1,3,5-triazine from cyanuric halide by Friedel-Crafts chemistry using Lewis acid has not been successful because of poor selectivity. A mixture of mono-, bis- and tris-aryl triazines would result. This invention overcomes this selectivity problem by using a reaction promoter in addition to Lewis acids and solvents.

Claims 1 to 31 were rejected in the instant Office Action under 35 U.S.C. § 112 second paragraph for not distinctly claiming the subject matter of the invention. The Office Action objects to the term "reaction promoter" because the Office Action contends that reaction promoter could include solvents and the proviso at the end of claim 1 appears to exclude solvents. This rejection is respectfully traversed. The meaning of the proviso at the end of claim 1 is that the reaction promoter and solvent in any give reaction must be two separate distinct compounds. One compound can not act simultaneously as both a reaction promoter and a solvent in the same reaction. There must be two separate compounds for solvent and reaction promoter.

For clarity, Applicants are using the term "solvent" according to standard usage as being a component in a mixture, used in excess, for the purpose of dissolving, or at least partially dissolving another component. The primary role of the solvent is to serve as a diluent in the reaction. Whereas, in the present application, "reaction promoter", as disclosed on page 20, line 34 is a compound, which when used in combination with a Lewis acid forms a reaction facilitator, and produces the intermediate 2-halo-4,6-bisaryl-1,3,5-

triazine, with lower reaction temperatures or greater yields or higher selectivities, compared to the Lewis acid alone. Accordingly, if one compound is used in excess and whose purpose is to serve as a diluent and to at least partially dissolve the other components in the reaction, the other compound would be the reaction promoter. Thus after reading the entire document including the examples of the instant invention, one skilled in the art would be able to determine which compound is being used as a "solvent" and which is used as a "reaction promoter" in this Application.

For further clarification, it is possible that one compound, e.g., dichloroethane, could be used as a solvent in one reaction and as a reaction promoter in another reaction. If dichloroethane is being used as a "solvent", i.e., a diluent for the purpose of dissolving, or at least partially dissolving another component, there must be another component used as a "reaction promoter" that can fulfill the primary responsibility of the present invention as claimed of forming the reaction facilitator with a Lewis acid and producing the intermediate 2-halo-4,6-bisaryl-1,3,5-triazine, with lower reaction temperatures or greater yields or higher selectivities, compared to the Lewis acid alone. On the other hand, if dichloroethane is being used as a "reaction promoter", then there must be another component in that reaction that is used as a "solvent". There are examples demonstrating this concept in the instant invention. In Examples 12 and 13, tetrachloroethane is used as a solvent and resorcinol, a more reactive component than tetrachloroethane, is used as a reaction promoter. It will be obvious to one skilled in the art that other promoters with higher reactivity that can be used are, e.g., water, HCl, alcohols. In Examples 39, 42 and 55, methylene chloride, tert.-butyl chloride and allyl bromide, respectively, are used as reaction promoters whereas in each case chlorobenzene is used as a solvent, which is lot less reactive than the aliphatic halides used as reaction promoters in each of these examples. Once again, it will be obvious to one skilled in the art that other solvents can be used in the above examples ,e.g., dichlorobenzene, nitrobenzene, bromobenzene, carbon disulfide, etc. Thus, Applicants respectfully submit that one skilled in the art would know that the solvent would be less reactive than the reaction promoter, and would be used in excess as a diluent to at least partially dissolve some of the components in the reaction. Again, the "solvent" and the "reaction promoter" can't be identical, and must be two distinct components, according to the present invention as claimed.

The rejection of claims 1 to 31 under 35 U.S.C. § 112 first paragraph for incorporating new matter by adding the proviso at the end of claim 1 is respectfully traversed. First, this proviso was incorporated in the parent application (US 6,486,316 B1) without a new matter rejection. Secondly, Applicants respectfully submit that the use of separate terms for components reasonably conveys that there are separate components. For example, if one states that a composition comprises A, B and C, then this would

certainly reasonably convey that the composition has three separate components. The plain meaning of listing three separate terms means that there are three separate components. It certainly would not convey that there are only two-components. The proviso at the end of claim 1 merely makes explicit, what was implicit in the claims. The proviso was added merely to clarify that there would be three separate components (i.e., reactant of Formula II, reaction promoter and solvent) and that one compound could not simultaneously be two of the cited components in the reaction. This is further evidenced by Examples containing three-separate components. Applicants submit that this would reasonable convey to one skilled in the art that Applicants contemplated having three separate components for the compound of Formula II, reaction promoter and solvent in the claimed process.

Claims 1 to 31 were rejected under 35 U.S.C. § 112 first paragraph for not enabling the use of solvent as reaction promoter. As discussed above, the solvent is not used as a reaction promoter in the claimed process. The solvent is used in excess to at least partially dissolve the components in the reaction and primarily serves as a diluent. The reaction promoter must be different than the solvent and when used in combination with Lewis acid results in the use of lower reaction temperatures, or higher selectivity or greater yield to the intermediate 2-halo-4,6-bisaryl-1,3,5-triazine, compared to using Lewis acid without a reaction promoter.

The test for enablement is whether experimentation is needed to practice the invention and if so, whether it is undue. (See MPEP 2164.01). One skilled in the art could easily test whether a compound is a reaction promoter without undue experimentation. Applicants also wish to point out that as long as specification discloses at least one method for making the claimed invention that bears a reasonable correlation to the entire scope of the claims, the enablement requirement is satisfied. MPEP 2164.01(b); *In re Fisher* 166 USPQ 18, 24 (CCPA 1970). Moreover, for a claimed genus, representative examples applicable to a genus as a whole should be sufficient if one skilled in the art would expect the claimed genus can be made in a similar manner without undue experimentation. The Examples in the application demonstrate that resorcinol, methyl alcohol, hydrochloric acid, sulfuric acid, benzoic acid, dichloromethane, tert-butyl chloride, sodium hydroxide, aluminum hydroxide, ammonium hydroxide, sodium methoxide, etc., can be used as reaction promoters. In fact, even water can be used as a reaction promoter (see Examples 33 to 35). Therefore, Applicant has demonstrated that a large variety of compounds may be used as reaction promoters and should be able to claim "reaction promoter" broadly.

The rejection of Claims 1 to 31 under 35 U.S.C. 103(a) as being obvious under U.S. Patent No. 3,118,887 to Hardy and U.S. Patent No. 6,242,598 to Stevenson et al. (Stevenson) in view of U.S. Patent No. 1,551,095 to Fritzsche et al. (Fritzsche) is respectfully traversed.

Applicants are submitting a Rule 131(a) declaration by all the inventors "swearing behind" the Stevenson patent. This declaration is the same declaration that was filed in the related divisional application U.S. Serial No. 09/779,597. The declaration discloses notebook records relating to the reduction to practice of the recited invention, wherein an aryl substituted 1,3,5-triazine forming reaction facilitator comprising a Lewis acid (AlCl_3), a reaction promoter (conc. HCl-protic acid) and a solvent (chlorobenzene) is used to prepare bis-aryl and tris-aryl substituted 1,3,5-triazine compounds CDMPT (2-chloro-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine) and P-1062 (2-(2,4-dihydroxyphenyl)-4,6-bis(2,4-dimethylphenyl)-1,3,5-triazine), respectively.

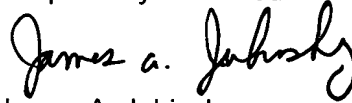
Please note that a declaration may be used instead of an affidavit (see MPEP 715.04).

Since Stevenson is not a prior art reference that only leaves Hardy in view of Fritzsche. Applicants have discussed Fritzsche and Hardy in previous responses and will not repeat all the arguments again. However, Applicants want to emphasize that a rejection is erroneous where there is a lack of any suggestion or motivation in the prior art to combine the specific components as combined by the inventor so as to obtain the enhanced properties of the invention. *In re Newell*, 891 F2d 899, 13 U.S.P.Q.2d 1248 (Fed. Cir. 1989). The prior art must contain both the suggestion of the combination and the expectation of the source in obtaining the desired results. This must be in the prior art, not in applicant's disclosure. *In re Dow Chemical Co.*, 837 F2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). Applicants respectfully submit that there is no suggestion or motivation in Hardy or Fritzsche that the combination of a Lewis acid and a reaction promoter, such as a protic acid, would lead to enhanced selectivity and yield to the claimed intermediate 2-halo-4,6-bisaryl-1,3,5-triazine. Applicants respectfully request that Examiner point out text in either reference that would lead or motivate one skilled in the art to believe that such a combination would lead to enhanced selectivity and/or yield to the claimed intermediate 2-halo-4,6-bisaryl-1,3,5-triazine. Since there is simply no such suggestion or motivation to expect greater yield or selectivity to 2-halo-4,6-bisaryl-1,3,5-triazine when a Lewis acid is combined with a protic acid, the 103(a) rejection should be withdrawn.

It is believed that the pending claims 1 to 31 are in condition for allowance and an early notification of such allowance would be appreciated.

If any outstanding issues remain, the Examiner is invited to telephone the undersigned at the number indicated below. Except for the Petition for Extension of Time, no other fee is believed due for this Amendment. If any fee is due, please charge the fee to Deposit Account 03-4083.

Respectfully submitted

A handwritten signature in black ink, appearing to read "James A. Jubinsky". The signature is fluid and cursive, with the first name "James" and last name "Jubinsky" clearly legible.

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